

the moult, and that is a male bird from Kandahar, collected by Sir O. St. John on the 7th of April, 1879.

This bird has lost nearly all the primaries of both wings, but as the secondaries, the tail, and the plumage generally appear very little worn, and the bird is not otherwise moulting, I cannot help thinking that the lost feathers have been accidentally or purposely removed, and their non-existence is not, therefore, due to moult.

XIV.—*Remarks on the Geographical Distribution of the Chiffchaff and Willow-Warbler.* By Capt. HUBERT LYNES, R.N., M.B.O.U.

(Plate XII.)

IN the cork-woods of the Gibraltar neighbourhood during the last few days of April and first few of June 1913, we spent a good many hours over the "*Phylloscopus*" Warblers.

Irby (Ornith. Str. Gib. 2nd ed. 1895, pp. 63-64) records four species of *Phylloscopus* as breeding there: *P. bonellii*, *P. collybita*, *P. trochilus*, and *P. sibilatrix*, the two latter being comparatively scarce. Many writers follow suit, apparently quoting Irby, for I cannot find other independent observations of the same matter on record.

We found plenty of Willow- and Wood-Warblers during the April visit, when they were evidently on passage and without song, but none in June, and no evidence of either species breeding in the neighbourhood on either occasion.

Of the others, Bonellis were plentiful. Their poor song in April suggested only recent arrival in the neighbourhood, and we could find no nests, although in June we saw one brood abroad with their parents among the cork-trees.

The only other breeding *Phylloscopus* (so far as we could find), was *by its song*, I think anyone would have agreed, a Willow-Warbler; singing males of this species shared the cork-wood glades in about equal proportion with Bonellis. For a Willow-Warbler, true, the song was unmelodious and

disjointed ("tin-potty," if one may use such an expression), the first two notes jerked out, so that for a moment they might have been put down to an eccentric Chiffchaff, had they not invariably been followed by the four or five notes in descending scale characteristic of the Willow-Warbler—in short, if it was a poor Willow-Wren's song, it was an impossible Chiffchaff's.

On the 29th of April we found a nest with four nearly fresh eggs belonging to this Warbler, and shot the hen bird off the nest, as well as a male singing close by and almost certainly her mate.

The nest, 18 inches above the ground, lightly placed among bracken and Spanish gorse, was decidedly more "Chiffchaff" than "Willow-Wren."

The eggs are curious, they average 15.6×13 mm., and the ground-colour is pure white without the yellowish tinge generally found in Willow-Warblers; on the other hand, there is no trace of the violet shell-marks usual in Chiffchaff's eggs. One of the eggs has sienna-brown freckles and spots of a darkness approaching the average Chiffchaff's; the other three, however, are plentifully sprinkled with quite light red marks like Willow-Warblers'.

Without knowing the parentage I should have put the clutch down as "doubtful, but probably Willow-Warbler."

It was therefore no little surprise, on examining the birds themselves, to find that they possess all the external characters, dimensions, wing-formula, emargination, etc., of the typical Chiffchaff; even in colour, so far as I can make out (and Mr. Witherby, who has kindly helped me in the matter, agrees), there is no appreciable difference from similar-aged birds obtained in the British Islands during summer. Possibly the sulphur-yellow axillaries may be a trifle brighter, but it would require a series of birds in less worn summer plumage than these, to pronounce definitely on the point.

In all we obtained seven specimens: ♂ ad. and ♀ ad. of nest 29/4; ♂ ad. 30/4; ♂ ad., ♂ ad. 2/6; ♂ ad. 3/6; ♂ juv. 4/6. The adults, especially the June ones, are all in very worn

plumage, the young bird just in its complete juvenile dress.

During the June visit there was less song, and young out of the nest were frequent; the main egg-laying period would seem to have been about the last week of April.

Now it seems to me that whether or no further experience proves the doubtful character of the eggs to be a constant one, and still assuming that these Gibraltar-breeding birds possess no external character of "form" * by which they can be differentiated from examples of the typical race, the peculiarity of song, which *is* constant, must have some significance; there must be some reason to account for all these numerous Chiffchaffs producing alike the same variation from the stereotyped "*chiff-chaff*" of the birds breeding in our own northern latitudes †.

It, at any rate, stamps that particular aggregate of individuals with a distinctive "habit" capable of recognition by the field-observer, and as such may prove useful in the study of the important, and as yet little understood, problems of migration and geographical distribution.

The case of a sedentary race of the Chiffchaff to the southward of Gibraltar has so important a bearing on the subject, that I may perhaps be forgiven for recalling the following facts with regard to the Canarian Chiffchaff, *P. c. canariensis* Hartwig.

In 1887 Capt. Savile Reid, having spent January to April in Tenerife, wrote ‡ as follows:—"Another bird quite common in the lower region as well as in the forest region . . . extremely lively and abundant . . . sorely puzzled by the notes of this bird, which differ considerably from the well-known 'chip-chop' . . . Canarian birds express their song

* The word "form" used in this paper is intended to include "colour."

† Dr. Hartert (Vög. pal. Fauna, i. p. 509) records an instance of a Willow-Warbler in Germany singing like a Chiffchaff, but in that case it seems to have been the idiosyncrasy of a single individual; similar observations have been recorded by Pässler, Parrot and others.

‡ 'Ibis,' 1887, pp. 431-2.

at greater length in a desultory manner, though also in monosyllables, the sounds 'chip-cheep-cheep-chip-cheep,' &c....

"Nests generally 4 or 5 feet above the ground, eggs spotted pale red like '*trochilus*'"

In 1889 Canon Tristram, after a visit with Mr. Meade-Waldo to the Canary Islands in April and May, wrote * confirming Reid's field-observations for some of the other Canary Islands as well as Tenerife (but without noticing the egg peculiarity), and added that the bird was a "constant resident, not even migrating up and down the hills." Tristram further recognised and described certain peculiarities in colour and form, and following the (British) general practice of the period accorded the bird specific rank as *P. fortunatus*.

Since those days, thanks to other writers, the bird's status has become well known; it is widely recognised as a subspecies of the typical *P. c. collybita*, under the name of "*P. c. canariensis* Hartwig," and Dr. Hartert gives a full description of it in his Vög. pal. Fauna, briefly thus:—

Compared with typical P. c. collybita.

Form.—Smaller size, much darker, olive-brown upper-parts, also much browner under-parts.

Wing broader, shorter, less pointed, more rounded.

Habits.—Different song, of *more* than two notes, not at all like our Chiffchaff's call-note †, harsher and shriller.

Nest generally placed higher.

Eggs generally four, white, with brownish or reddish freckles and dots inclined to run a little larger.

Habitat.—The western Canary Islands, where it is resident ‡.

I may say that in three specimens of *P. c. canariensis* obtained by Miss Jackson in Tenerife in April 1913, besides

* Tristram, 'Ibis,' 1889, p. 21; Meade-Waldo, 'Ibis,' 1889, p. 6.

† The Gibraltar birds had the typical soft call-note.

‡ *Note*.—Dr. Hartert also describes a further subspecies (*P. c. exsul*) from Lanzarote, one of the eastern Canary Islands; its habits seem to be little different from those of *P. c. canariensis*.

the colour-differences being obvious at first glance, all three birds have the bill quite remarkably robust, larger in every dimension than in any of some thirty *P. c. collybita* examined alongside them.

Here, then, we have the Canarian bird differing in certain habits and in form from its typical species, while in a certain district (restricted, but to what extent we know not yet) intermediate between their breeding-areas, are breeding Chiffchaffs with habits resembling the former, but with the typical form.

An interesting line of thought is thus provided.

There are many good reasons for thinking that the "habit" of song* may be correlated with others, such as "migratory movement"—in fact, these south European, and particularly the Gibraltar, Chiffchaffs are generally quoted as being "resident" or "sedentary" (although, as I propose to point out later, I believe this to be mere guesswork). It is, moreover, an observed fact in Nature which provides interesting reflections on the inter-relationship of variation in "habit" and variation in "form."

Darwin (Orig. of Sp. p. 220) says "It is, however, difficult to decide whether habits change first and structure afterwards, or whether slight modifications of structure lead to changed habits—both probably occurring simultaneously."

Anticipating, for instance, what requires the accumulation of a vast amount more fact before the truth can be arrived at, it is conceivable that here is an instance of what may be

* Professor Newton (Dict. Birds, p. 893) says: "A curious question which has yet attracted but little attention is whether the notes of the same species of bird are in all countries alike. From my own observations I am inclined to think not, and that there exist 'dialects,' so to speak, of song (*cf.* Gloger, *J. für Orn.* 1859, p. 398; Allen, *Bull. Mus. Comp. Zool. Harv. Coll.* ii. pp. 166, 167)."

Eliot Howard (*Brit. Warblers*, p. 20) points out certain differences in song among Warblers and Chats in different localities and suggests that "there is a possibility, even a probability, perhaps, of some connection between type of song and climate."

Witherby (*Ibis*, 1905, p. 186) notes the remarkable difference between the song of the Wood-Warbler in Algeria in April and that of our British Wood-Warblers.

termed an "incipient variety" *, an *aggregate* of individuals at the present day indistinguishable in form (colour and external characteristics), but possessing a habit so different from that of its type-species as to indicate a tendency towards variation in form, which may in time attain that first recognisable degree defined as "racial" or "sub-specific," as has presumably been the case with the Canarian race of Chiffchaff.

As remarked before, it is either implied or stated in most of the standard works of reference that the Chiffchaff is more or less resident in southern Europe. Since no records for individual birds seem ever to have been attempted, it is presumed this only means that the *species* is to be found there, both in winter and summer, which is, of course, a very different thing to the *individuals* of the species being non-migratory; I can find no real facts about that, but it is important in its bearing on the present subject.

With the view of enquiring generally into the Chiffchaff's (*P. c. collybita*) southern breeding and northern winter limits, and whether any reason, geographical or physical, could be deduced to account for them, I started plotting out on a chart, both for the Chiffchaff and the Willow-Warbler (whose strong resemblance complicates field-observation on its congener), all the records I could find from a fairly wide selection of references †, but soon found that the

* Darwin ('Origin of Species' p. 76) "... varieties which I have called incipient species"

Note.—I trust this will not be construed into a proposal for some new sort of "Name." Naturally, such an idea would be almost as absurd as to suggest giving every single bird a name of its own because it possesses "individuality" and a tendency to vary.—H. L.

† Hartert's 'Vög. paläarkt. Fauna.' H. Saunders, Man. Brit. Birds. Hand-list Brit. Birds (Hartert, Witherby, and others). Cat. Birds Brit. Mus. Ibis. Eliot Howard's 'Warblers.' Irby's Ornith. Str. Gib. Jourdain's 'European Eggs.' Whitaker's 'Birds of Tunisia.'

There are doubtless other works that would offer a few more data, but I cannot foresee any approach to their contributing sufficient material for the original purpose, and only hope these remarks may bring out some new facts not already recorded or that have escaped my search among the above.

material was quite inadequate for the purpose. I am, therefore, only able to present the very incomplete affair shown in the map (Pl. XII.), upon which I would offer the following remarks :—

NORTHERN WINTER LIMITS.

The following generalities may perhaps be considered fairly well substantiated :—

Chiffchaff.—All over the Mediterranean littoral, but *not* the cold inland regions behind the northern shores, and on the western coasts of Europe, so far north as the warm influence of the Gulf Stream pushes the Mediterranean isotherms to the north-east there. It is clearly a matter of temperature ; the most northerly-wintering individuals of the species evidently keep quite close to the bare possibilities of their insect food.

Willow-Warbler.—Quite different to the *Chiffchaff* in winter requirements, as its most northerly members only just touch the south-west end of the Mediterranean.

(The authority for Provence is too good to be disregarded, and is presumably supported by specimens, but it must surely be a little exceptional, with no other, or negative, records for so great a distance around it.)

SOUTHERN BREEDING LIMITS.

These are so ill-defined than no generalization can be made, but the following remarks are offered :—

Chiffchaff.

Portugal.—Given in a general way by Tait. But how far south ? We know it breeds (the one with the curious song and eggs) in numbers at Gibraltar, but there seem to be no records of breeding elsewhere in Andalusia. Abel Chapman and I were constantly in cork, ilex, and pine woods from the Sierra Nevada to Jerez (March, April, and May 1910, *vide* 'Ibis,' 1912, p. 451) and never found the suspicion of a *Chiffchaff* breeding at any altitude, or, for the matter of that, in a short visit to the chestnut and oak woods of north-west Estremadura at the end of May 1910.



In March, April, and May 1905 Mr. Ratcliff and I had a similar experience in the province of Huelva, which abuts on the south-eastern borders of Portugal.

Excepting near Gibraltar, do any Chiffchaffs nest in the Iberian peninsula south of lat. 40° N.? If there really is a gap in the breeding-area, it decidedly favours the theory that the Gibraltar birds are more or less non-migratory.

Atlas Range.—There are many suggestions on record of various *Phylloscopi* breeding there, based on song and enlarged sexual organs, which are, of course, no *proof* whatever, especially in migrating birds, which are only a few hundred miles or less from their prospective breeding-grounds. The only record which must be referred to is that given by Witherby ('Ibis,' 1905, p. 186) for the nest and eggs of a *Phylloscopus* in Algeria.

With regard to its species, Witherby tells me that after a long wait he was unable to obtain the owner of the nest and therefore left it intending to return next day; this he did but was unfortunately unable to locate the nest again, but he described it as "evidently belonging to this species," and as a Chiffchaff in song with testes in breeding condition* was obtained in the same locality, it is nearly certain that the Chiffchaff *does* breed there.

Sardinia.—Extremely doubtful as a breeding locality, and if its reputation as such rests only on Brooke's ('Ibis,' 1873, p. 244) note, still more so, for I do not read it that he refers to breeding at all. (Records show almost certainly that Corsica is not a breeding locality.)

Sicily.—Apparently very doubtful too. We certainly did not find the Chiffchaff in the very suitable-looking country

* It is interesting to note that this particular specimen was mentioned in Witherby's paper as "*P. trochilus*," but on re-examining it just recently we find it is a typical *P. c. collybita*, just like the Gibraltar ones, and he asks me to mention this in order that the correction may be made in his paper. He does not remember what the song was like, but the possibility of his having been led into a too hasty identification by a Willow-Warbler-like song suggests itself.

of the eastern interior in May 1907 (*vide* 'Ibis,' 1912, p. 121); on the other hand, one hears of great possibilities in the little-known forests in the central parts of the island.

Italy.—I cannot find the records from which the conclusions are drawn.

Willow-Warbler.

Gibraltar.—There does not seem to be independent records by other than Irby, who is widely quoted; and, with all due apology for venturing to question so great an authority, I have only given the record a hollow ring on the map for several reasons:—First, according to "Ornith. Str. Gib. 2nd ed. 1895, p. 64," it appears that the breeding statement is based on field-observation only, and I think it quite possible that, like myself, Irby may have been deceived by the Willow-Warbler-like song of the Chiffchaff there, if specimens were not obtained; secondly, the locality is so very isolated from the next record.

After all the ring on the map can easily be solidified by anyone who can produce a nest and eggs from Gibraltar, with a specimen of the Willow-Wren shot from it.

Sardinia and Sicily.—The records seem more doubtful than for the Chiffchaff.

In the foregoing remarks only the species have been dealt with; still more obscure is the distribution of the subspecies "*P. t. evermanni*" and "*P. c. abietina*," both occurring in the Mediterranean basin, the former probably only as a passage-migran', the latter known to winter on its south-eastern shores (Nicoll, 'Ibis,' 1909, p. 295).

It is surely no unworthy aim to collect and scrutinize all facts, however apparently insignificant, that may throw light on so great a problem of Nature as the relationship between the geographical distribution of living creatures and modifications of their habits and form.

Would not the material for plotting out accurately with full data the geographical distribution of even one species such as the "Chiffchaff," with its several (already recognised)

subspecies, and perhaps several other "incipient" ones, be well worth collecting with such an end in view?

There should be no great difficulty; the principal field of observation is in an area well stocked with ornithologists; the subject within the capabilities of all—the only requisite is the wish to "find out."

One so often hears it said that "Now the world has been so travelled over, there is little of ornithological interest left to discover," suggesting that when all the earth has been quite explored and all the new birds discovered, there will be nothing left for the field-ornithologist to do.

But does not such a thoughtless remark arise from a disproportionate regard for "classification" as the Ultima Thule of ornithological research, instead of only as a means to an end?

Sir Joseph Hooker writes of Plants, "The objects of a Classification of plants are to place before the mind, in a clear manner, the relationships that exist between them, and to express these relationships in precise terms, so that they may be communicated orally or in writing *and thus facilitate and advance a knowledge of plants.*"

And surely the same definition applies equally to all branches of Natural History?

One cannot help thinking that if that principle were more generally recognised and acted upon, it would tend, not only to prevent ornithological classification from becoming stocked with phantom forms, but also towards the more general recognition of forms which, though distinguished only after a careful scrutiny of minutiae, are realities, and as such (to use Dr. Hartert's simile) a "brick" towards the building up of the house of Ornithological Knowledge.

To return to the Chiffchaffs (if I have any friends left among my readers after the last volley), may I suggest the following lines of action as likely to produce useful results, besides having the merit of presenting certain definite objectives to any field-ornithologist who has the opportunity of making the observations and the will to do so?

With regard to the Gibraltar-*breeding* Chiffchaffs:—

(a) Are these non-migratory (*i. e.*, resident) individuals, or do they leave in winter to make room for winterers from further north?

This is, of course, not so easy to find out, since it is almost certain that Gibraltar will receive its winter proportion of Chiffchaffs from the north, irrespective of the movements of the local breeders.

Ringling and perhaps observations in March will perhaps prove the most fruitful methods of attacking this little problem.

(b) Will examination of more specimens, particularly of freshly moulted adults in autumn, show any peculiarity of form (including coloration) to distinguish these Gibraltar birds from typical *P. c. collybita*?

(c) Does further experience show that the peculiarity of the eggs is constant?

(d) When does the song commence in spring? Is it ever heard in winter*? If a resident, and such were the case, it would help towards the solution of (a). Is the song *always* the same, Willow-Warbler-like?

Dr. Hartert, who has very kindly interested himself in the matter and to whom I have given the nest, eggs, and specimens of the Gibraltar Chiffchaffs already alluded to, permits me to say that he will be glad to compare them with any others that may be sent to him in connection with this particular question.

With regard to the distribution question in general, I think that the map itself, without further remark, shows sufficiently the many gaps that can be filled in by the field-ornithologist.

* There are quite a few records of the Chiffchaff's song being heard in the Mediterranean basin in winter time.